Part No. 214695-B
April 2004

4655 Great America Parkway
Santa Clara, CA 95054

Installing and Using the Nortel Networks Wireless LAN Mobile Adapter 2201

Release 1.1.0.0

NORTEL NETWORKS™

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Compliances

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:
FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 2.5cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Caution: This device includes a module which can emit RF energy. For compliance with FCC exposure rule, the user has to keep at least 2.5cm separation distance between the radiator and the body of the user.

Exposure to Radio Frequency Radiation

The radiated output power of the Nortel Networks Wireless LAN Mobile Adapter 2201 radio is far below the FCC radio frequency exposure limits. Nevertheless, the wireless radio shall be used in such a manner that the potential for human contact during normal operation is minimized.

The Nortel Networks Wireless LAN Mobile Adapter 2201 radio operates within guidelines found in radio frequency safety standards and recommendations, which reflect the consensus of the scientific community. Nortel Networks therefore believes the internal wireless radio is safe for use by consumers. The level of energy emitted is far less than the

electromagnetic energy emitted by wireless devices such as mobile phones. However, the use of wireless radios may be restricted in some situations or environments, such as aboard airplanes. If you are unsure of restrictions, you are encouraged to ask for authorization before turning on the wireless radio.

European Community Notice

Marking by the symbol CE0560(!) indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

EN 301 893, EN 301 489-17, EN 60950, ETS 300 328-2

This device should not be operated in 802.11a mode in the following European Community countries: Greece and Spain. The radio spectrum authorities in these countries do not currently allow operation of this radio device in the 5GHz bands.

This device is restricted **to indoor use** when operated in the European Community using channels in the 5150-5350 MHz band to reduce the potential for harmful interference to other users of the band.

To remain in conformance with European National spectrum usage laws, the following channel limitations apply per the table below. **The user should use the utility provided with the product software to check the current channel of operation**. If operation is occurring outside of the allowable frequencies as listed in the table, the user should cease operating the product and consult with the local technical support staff responsible for the wireless network.

This device is restricted from operating in **ad-hoc mode using channels in the 5GHz bands in the European Community**. Ad-hoc mode is direct communication between two client devices without an Access Point.

Allowable Frequencies of Operation	Countries
5150-5250 MHz (Channels 36, 40, 44, 48)	Austria, Germany, Liechtenstein, Switzerland
5150-5350 MHz (Channels 36, 40, 44, 48, 52, 56, 60, 64)	Belgium, France, Ireland, U.K.
5150-5350 & 5470-5725 MHz (Channels 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140)	Denmark, Finland, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Sweden
2446.5Mhz - 2483.5Mhz (Channels 10,11,12,13)	France

European Community Declaration of Conformity:

English Hereby, Nortel Networks, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Finnish *Valmistaja* Nortel Networks vakuuttaa täten että Radio LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Dutch Hierbij verklaart Nortel Networks dat het toestel Radio LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG

Bij deze verklaart Nortel Networks dat deze Radio LAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.

French	Par la présente Nortel Networks déclare que l'appareil Radio LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE Par la présente, Nortel Networks déclare que ce Radio LAN device est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables
Swedish	Härmed intygar Nortel Networks att denna Radio LAN device står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Danish	Undertegnede Nortel Networks erklærer herved, at følgende udstyr Radio LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF
German	Hiermit erklärt Nortel Networks, dass sich *dieser/diese/dieses* Radio LAN device in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMWi) Hiermit erklärt Nortel Networks die Übereinstimmung des Gerätes Radio LAN device mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)
Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Nortel Networks ΔΗΛΩΝΕΙ ΟΤΙ Radio LAN device ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ
Italian	Con la presente Nortel Networks dichiara che questo Radio LAN device è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Spanish	Por medio de la presente Nortel Networks declara que el Radio LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE
Portuguese	Nortel Networks declara que este Radio LAN device está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

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Preface

Introduction

This User Manual contains detailed instructions in the operation of the Nortel Network Wireless LAN Mobile Adapter 2201 (Mobile Adapter 2201). Please keep this manual for future reference.

Package Checklist

The Mobile Adapter 2201 package includes:

- 1 Nortel Network Wireless LAN Mobile Adapter 2201
- 1 Installation Software CD
- 1 Documentation CD

Note: Nortel Network Wireless LAN Mobile Adapter 2201 release 1.1.0.0 includes version 1.1.0.0 of the Mobile Adapter 2201 driver and version 2.1.0.0 of the Mobile Adapter 2201 utility.

Note: Nortel Network Wireless LAN Mobile Adapter 2201 release 1.1.0.0 is only available via download from the Nortel Networks support site (www.nortelnetworks.com/support). See Chapter 1, “Driver/Utility Installation,” on page 13 for installation instructions.

System Requirements

Before you install the Mobile Adapter 2201, check your system for the following:

- A laptop PC contains:
  - 32-bit Cardbus slot
  - 64 MB memory or greater
  - 300 MHz processor or higher
- Microsoft Windows 2000 or Windows XP (Prepare the Windows installation CD-ROM for use during installation; some versions of Windows require you to have administrator privileges)

Status LEDs

There are two Status LEDs on the Mobile Adapter 2201. You can check your network connectivity status by looking at the LEDs.

Table 1 Status LEDs

Status	Description
Off	Power is off.
Slow Blink	A connection is made. There is no activity yet.
Fast Blink	There are activities in a connected network.
Alternate Blink between LEDs	Look for a network association.
One LED Blink	Power Saving Mode is on.
One LED Steady Light	Awake from Power Saving Mode.

Chapter 1
Driver/Utility Installation

Warning: Do Not insert the Mobile Adapter 2201 into the Cardbus slot before installing the driver.

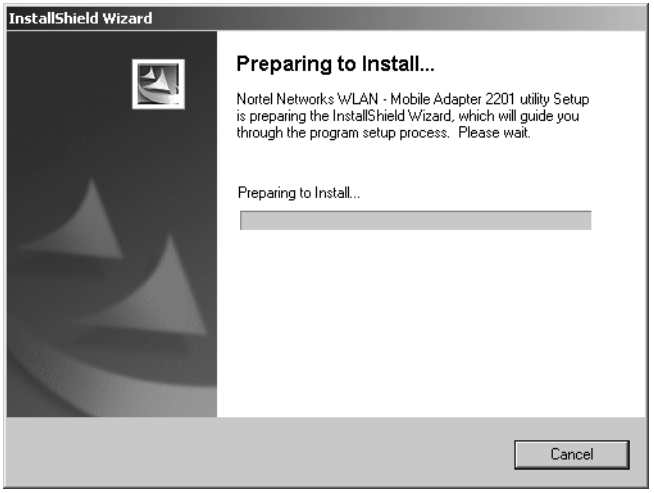
To protect your computer's configuration, you **must** follow the specific installation instructions for the specific Windows installation you are running.

Basic Setup

Follow the steps below to complete the driver/utility installation:

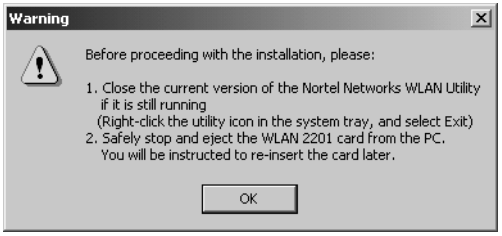
1. Download the zip archive file containing the Mobile Adapter 2201 release 1.1.0.0 installation files from the Nortel Networks support site (www.nortelnetworks.com/support).
2. Expand the zip archive file and click "setup.exe" to launch the InstallShield Wizard (Figure 1).

Figure 1 InstallShield Wizard


InstallShield Wizard
Preparing to Install...
Nortel Networks WLAN - Mobile Adapter 2201 utility Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
Preparing to Install...
Cancel

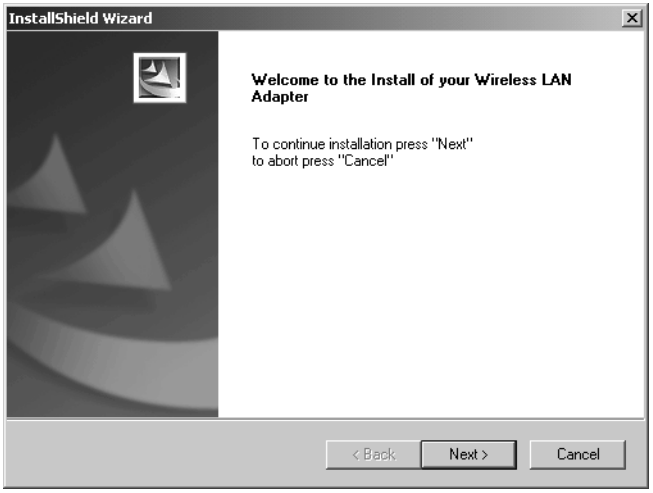
Note: If the InstallShield Wizard detects an older version of the Nortel Networks Mobile Adapter software, you will be prompted to close the utility if it is running and to eject the Mobile Adapter 2201 if it is already inserted (Figure 2). Click "OK" and the InstallShield will continue with the installation (Figure 3).

Figure 2 Previous version detected screen


Warning
Before proceeding with the installation, please:
1. Close the current version of the Nortel Networks WLAN Utility if it is still running
(Right-click the utility icon in the system tray, and select Exit)
2. Safely stop and eject the WLAN 2201 card from the PC.
You will be instructed to re-insert the card later.
OK

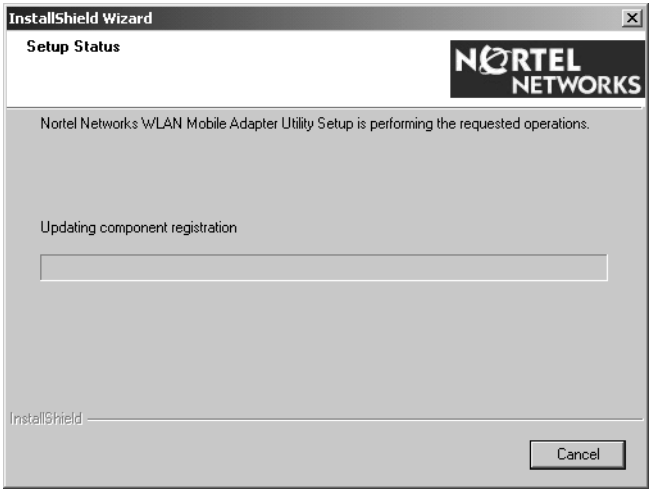
3 The InstallShield Wizard welcome screen appears (Figure 3). Click "Next."

Figure 3 InstallShield Wizard welcome dialog box


InstallShield Wizard
Welcome to the Install of your Wireless LAN Adapter
To continue installation press "Next"
to abort press "Cancel"
< Back
Next >
Cancel

4 The InstallShield Wizard Setup Status screen displays the progress of the installation (Figure 4).

Figure 4 InstallShield Wizard Setup Status screen



5 As the installation progresses, a message to insert the mobile adapter will appear (Figure 5).

Figure 5 Insert mobile adapter message

6 Insert the Mobile Adapter 2201 into the Cardbus slot (Figure 6), and the Windows Operating System will find the new hardware (Figure 7) and install the drivers.

Note: The Digital Signature Not Found dialog box (Figure 8) or the Windows XP compatibility testing dialog box may appear during driver installation. Click "Yes" (Windows 2000) or "Continue Anyway" (Windows XP) to continue the installation.

Figure 6 Inserting the adapter

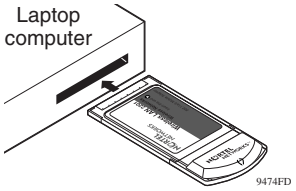


Figure 7 Found New Hardware dialog box

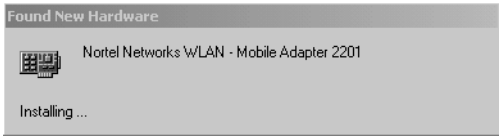
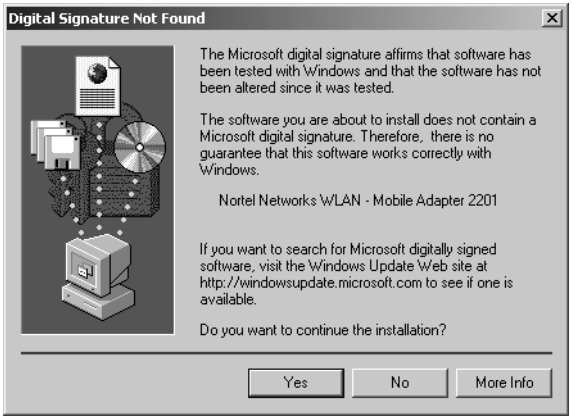
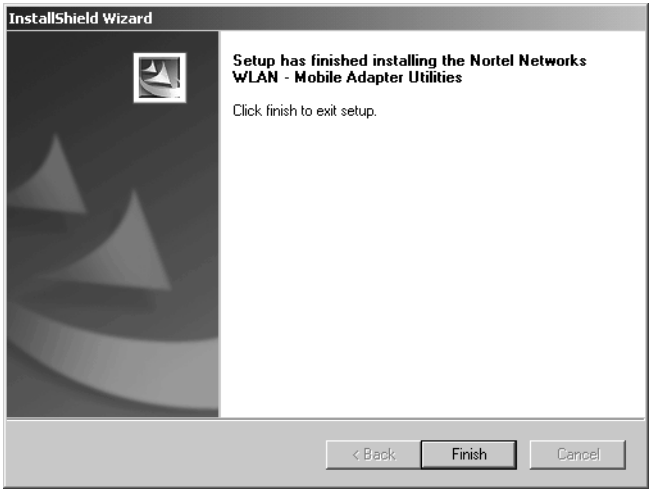


Figure 8 Digital Signature Not Found dialog box


Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
Nortel Networks WLAN - Mobile Adapter 2201
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

7 The driver files are copied to your system. The installation completes. The InstallShield Wizard Complete dialog box appears (Figure 9). Click "Finish."

Figure 9 InstallShield Wizard Complete dialog box



The Mobile Adapter 2201 software is now installed and the utility icon will appear in the system tray (Figure 9).

Figure 10 WLAN Mobile Adapter Utility Icon in system tray

Additional Setup

During software installation procedure, select “Install the software automatically” if the window with this option appears, and then click “Next” to continue installation.

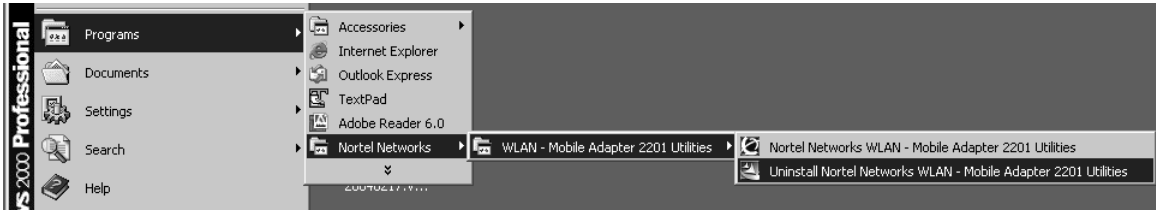
Note: Refer to “Configuring advanced settings for Windows XP” on page 32 for information on disabling the Windows XP Zero Configuration tool.

Uninstallation

Note: Before uninstallation, please close all running programs and make sure that the Mobile Adapter 2201 is inserted in the Cardbus slot.

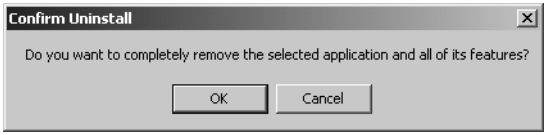
1 Click Start>Programs>Nortel Networks>WLAN - Mobile Adapter 2201 Utilities>Uninstall Nortel Networks WLAN - Mobile Adapter 2201 Utilities (Figure 11).

Figure 11 Uninstall Mobile Adapter 2201



2 The Confirm Uninstall dialog box appears (Figure 12). Click “OK” to start Uninstall.

Figure 12 Confirm Uninstall dialog box

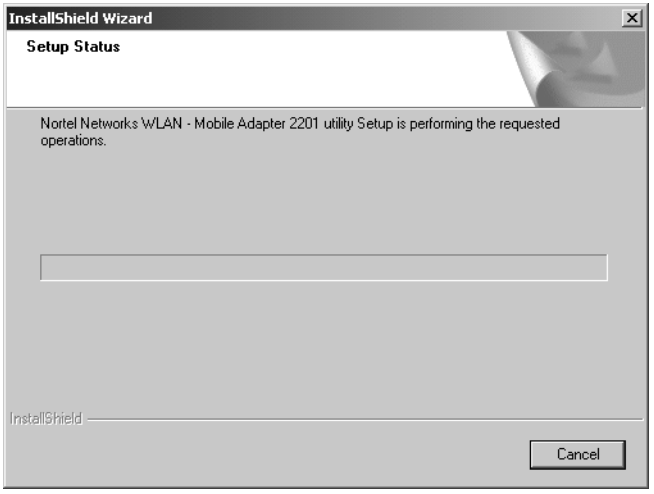


3 Remove the Nortel Networks Mobile Adapter when instructed (Figure 13). Click "OK."

Figure 13 Remove adapter dialog box

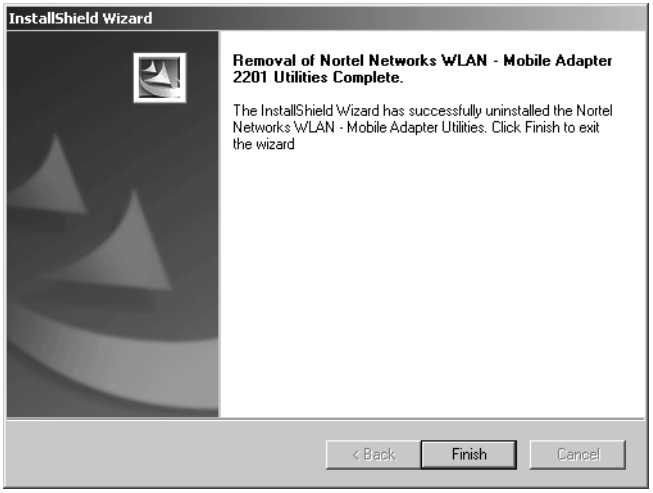
4 The InstallShield Wizard Setup Status screen displays the progress of the uninstall (Figure 14).

Figure 14 InstallShield Wizard Setup Status screen


InstallShield Wizard
Setup Status
Nortel Networks WLAN - Mobile Adapter 2201 utility Setup is performing the requested operations.
InstallShield
Cancel

5 The Removal Complete dialog box appears (Figure 15). Click "Finish." Uninstall is now complete.

Figure 15 Removal Complete dialog box


InstallShield Wizard
Removal of Nortel Networks WLAN - Mobile Adapter 2201 Utilities Complete.
The InstallShield Wizard has successfully uninstalled the Nortel Networks WLAN - Mobile Adapter Utilities. Click Finish to exit the wizard
< Back
Finish
Cancel

Chapter 2
Utility Configuration

Connecting to an Existing Network

1 Click Start>Programs>Nortel Networks>WLAN - Mobile Adapter 2201 Utilities>Nortel Networks WLAN - Mobile Adapter 2201 Utilities (Figure 16), and the Mobile Adapter 2201 Utility window will appear (Figure 17).

Figure 16 Launch Mobile Adapter 2201

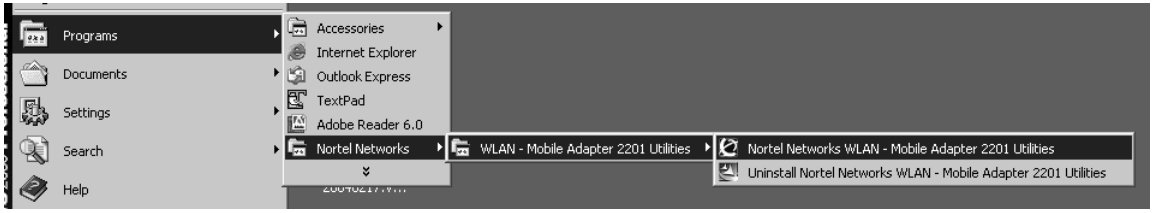
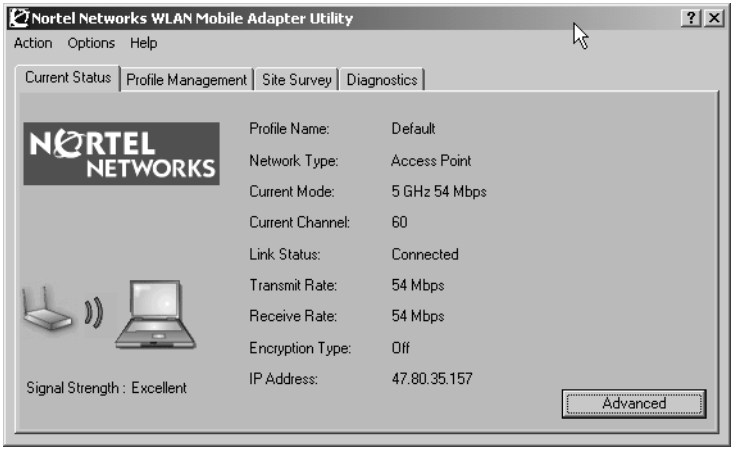
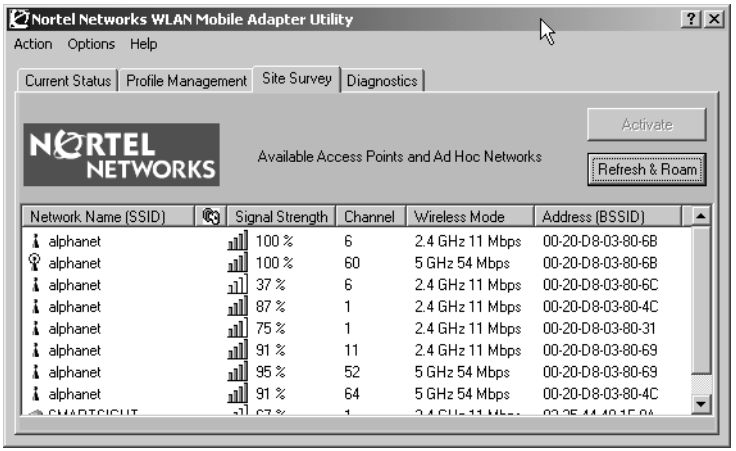


Figure 17 Mobile Adapter 2201 Utility



2 Click the Site Survey tab to bring up a list of the available access points and ad hoc networks (Figure 18).

Figure 18 Mobile Adapter 2201 Client Manager - Site Survey tab


Nortel Networks WLAN Mobile Adapter Utility
Action Options Help
Current Status Profile Management Site Survey Diagnostics
NORTEL NETWORKS
Available Access Points and Ad Hoc Networks
Activate
Refresh & Roam
Network Name (SSID) Signal Strength Channel Wireless Mode Address (BSSID)
alphanet 100 % 6 2.4 GHz 11 Mbps 00-20-D8-03-80-6B
alphanet 100 % 60 5 GHz 54 Mbps 00-20-D8-03-80-6B
alphanet 37 % 6 2.4 GHz 11 Mbps 00-20-D8-03-80-6C
alphanet 87 % 1 2.4 GHz 11 Mbps 00-20-D8-03-80-4C
alphanet 75 % 1 2.4 GHz 11 Mbps 00-20-D8-03-80-31
alphanet 91 % 11 2.4 GHz 11 Mbps 00-20-D8-03-80-69
alphanet 95 % 52 5 GHz 54 Mbps 00-20-D8-03-80-69
alphanet 91 % 64 5 GHz 54 Mbps 00-20-D8-03-80-4C

Note: An access point shown with no SSID value is configured as a closed system. If the Mobile Adapter 2201 is configured with the matching SSID of an access point configured for closed system, the site survey will display the SSID of that access point. The Mobile Adapter 2201 will associate to an access point configured for a closed system only when the SSID of the access point matches the SSID of the Mobile Adapter 2201's active profile.

A circle on the icon next to the Network Name (SSID) indicates that the Mobile Adapter 2201 is associated with that access point or ad hoc network (Figure 19 and Figure 20.) See Chapter 3, "Network Configuration," on page 35 for more information about ad hoc mode and infrastructure mode.

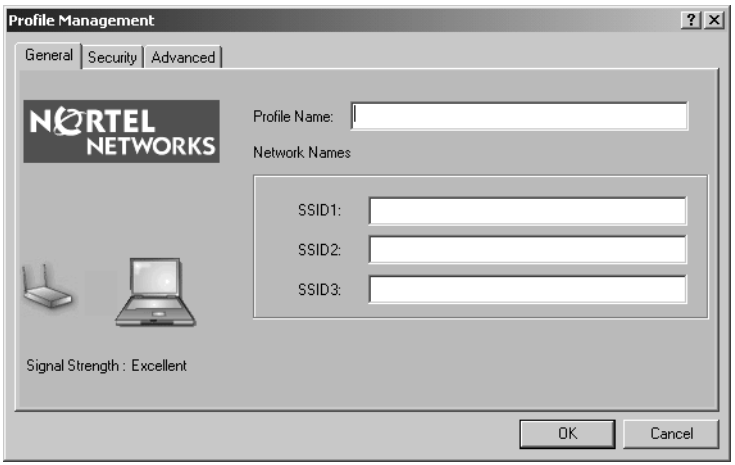
Figure 19 Association Icon — Access Point

Figure 20 Association Icon — Ad Hoc Network

3 To connect to a different access point, select the Network Name (SSID) for that access point and click on “Activate.”

4 If you do not already have a configuration profile created for this association, you will be prompted to create one. The Profile Management dialog box will launch (Figure 21).

Figure 21 Profile Management dialog box - General Tab



Enter a Profile Name and the correct SSID for the network that you are going to join. Table 2 describes the items on the Profile Management Settings - General tab.

Figure 22 Profile Management Settings dialog box - General Tab

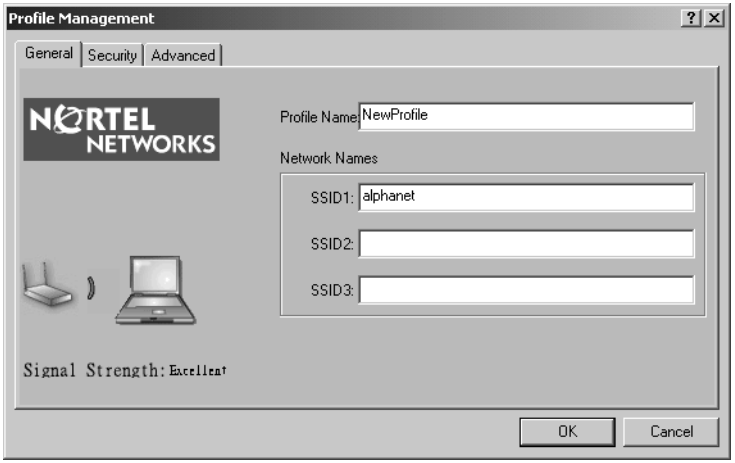


Table 2 Profile Management Settings - General tab

Item	Description
Profile Name	This name identifies the configuration. This name should be unique.
SSID (1-3)	The name of the wireless network. This name cannot be longer than 32 characters. If the field is set to be “ANY” or is left blank, your computer will connect to an AP with the best signal strength.

5 Click on the Security tab (Figure 23). The Security dialog box appears. Select the radio button that corresponds to the security method used on your network. (Default: None)

Figure 23 Profile Management - Security Tab

Depending on the security method chosen, you may have to configure additional parameters. Table 3 shows the required parameters and settings for each security method.

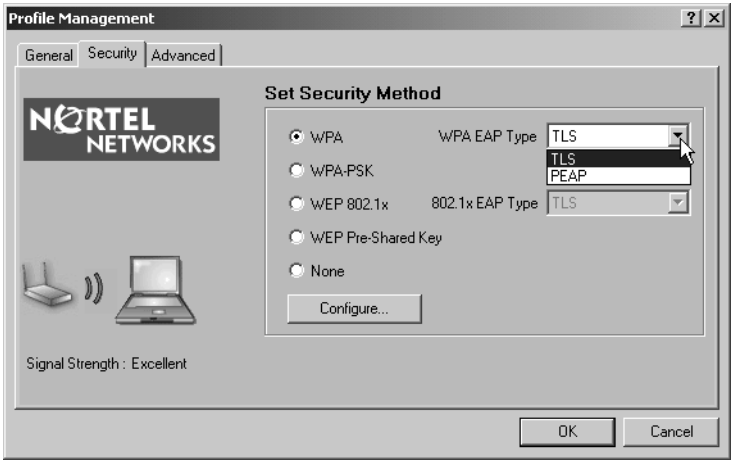
Table 3 Required parameters for each security method

Security method	Required parameters
None (no encryption)	--
WEP Pre-Shared Key	• one or more pre-shared keys • key entry method • key length
WEP 802.1x	• 802.1x EAP type • certificate • certificate authority • server/domain name • login or user name
WPA-PSK	• WPA passphrase
WPA	• WPA EAP type • certificate • certificate authority • server/domain name • login name

The following example will configure the mobile adapter profile to connect to a network using the WPA Security Method, using TLS for the EAP type:

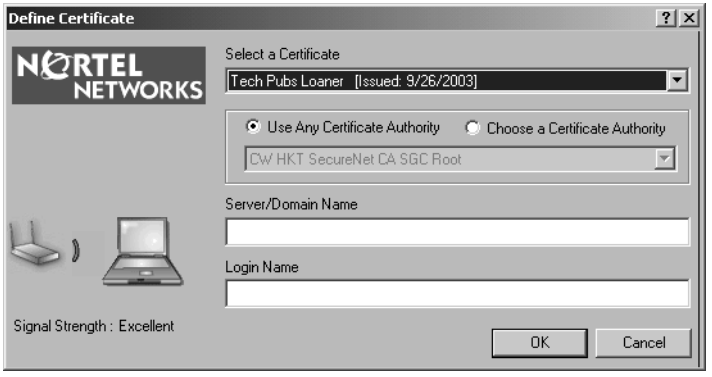
a From the Security tab, select the WPA radio button. The WPA EAP Type drop-down menu becomes active (Figure 24). Select TLS from the menu.

Figure 24 Profile Management - Security tab



b Click “Configure...” to bring up the Define Certificate dialog box (Figure 25). Verify the certificate settings are correct and enter the Server/ Domain Name and Login Name in the corresponding fields and click “OK.”

Figure 25 Define Certificate dialog box



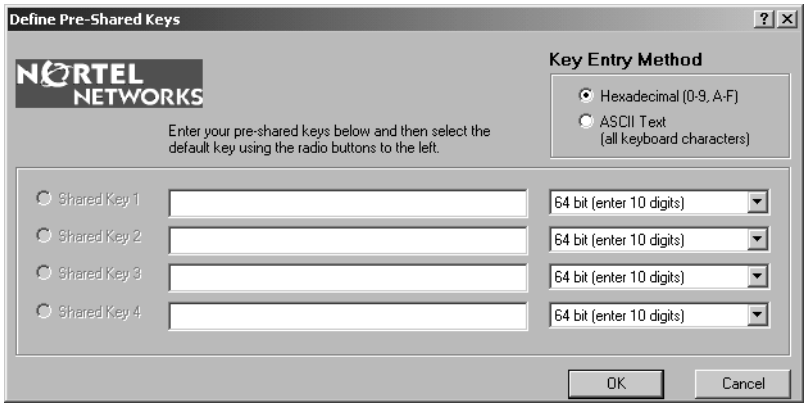
c Click “OK” to dismiss the Profile Management dialog box.

The profile is now configured to use WPA with TLS as the EAP type.

The following example will configure the profile to connect to a network using WEP with pre-shared keys.

a From the Security tab, select the WEP Pre-Shared Key radio button. Click "Configure..." and the Define Pre-Shared Keys dialog box appears (Figure 26).

Figure 26 Define Pre-Shared Keys


Define Pre-Shared Keys
NORTEL NETWORKS
Key Entry Method
Hexadecimal (0-9, A-F)
ASCII Text
(all keyboard characters)
Enter your pre-shared keys below and then select the default key using the radio buttons to the left.
Shared Key 1
Shared Key 2
Shared Key 3
Shared Key 4
64 bit (enter 10 digits)
64 bit (enter 10 digits)
64 bit (enter 10 digits)
64 bit (enter 10 digits)
OK
Cancel

b Select the key entry method, the key length and enter at least one pre-shared key in the corresponding field. Click "OK" to save the pre-shared key information.

Note: All keys must be entered using the same format (ASCII or Hexadecimal).

c Click "OK" to dismiss the Profile Management dialog box.

The profile is now configured to use WEP with pre-shared keys.

6 Click on the Advanced tab to set advanced settings (Figure 27). Table 4 shows the items on the Network Configuration Settings - Advanced tab.

Figure 27 Profile Management Settings - Advanced tab

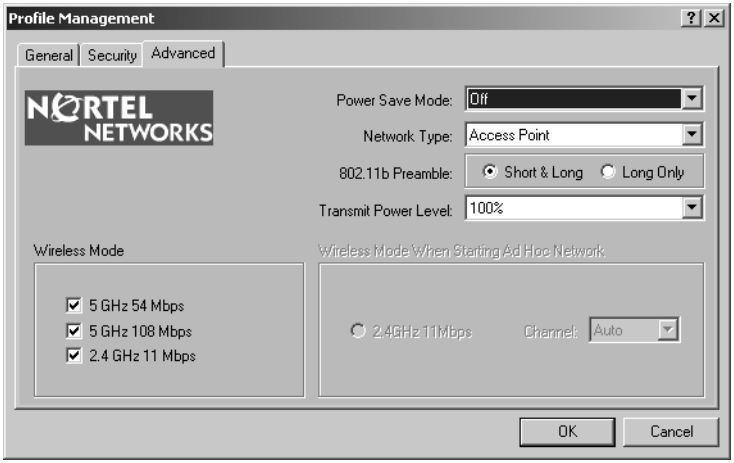
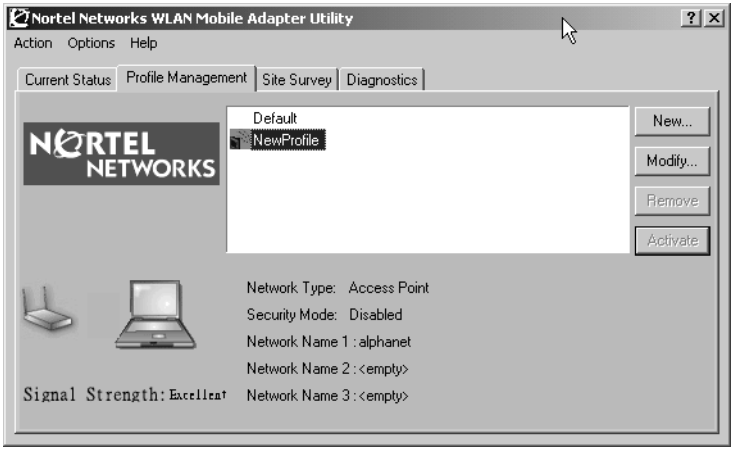


Table 4 Profile Management Settings - Advanced tab

Item	Description
Power Save Mode	Three power management options are “Off,” “Normal” and “Maximum.” In Ad Hoc mode, Power Savings function cannot be enabled.
Network Type	Specifies the mode of the network. Two options are “Access Point” and “Ad Hoc.”
802.11b Preamble	Two options are “Short & Long” and “Long Only.”
Transmit Power Level	Options are “100%,” “50%,” “25%,” “12.5%” and “Lowest.”
Wireless Mode	Three options are “5 GHz 54 Mbps,” “5 GHz 108 Mbps” and “2.4 GHz 11 Mbps.”
Wireless Mode When Starting Ad Hoc Network	Options for channel are “Auto” or channels 1-11. This option is only enabled if “Ad Hoc” is selected for Network Type.

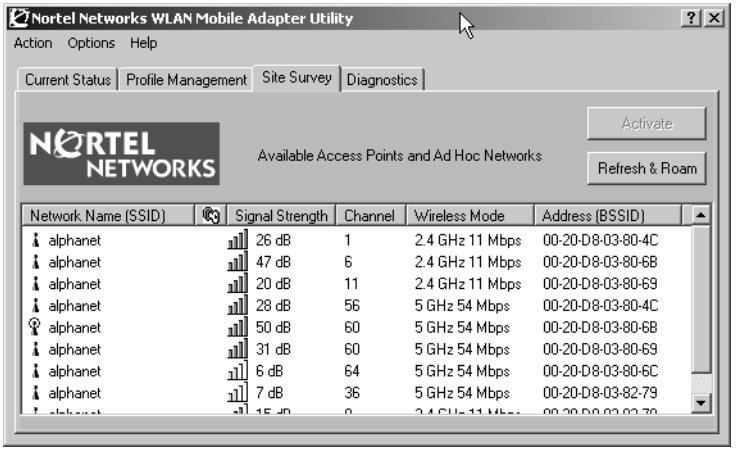
7 Once all of the profile settings have been entered, click OK. The newly created profile will be displayed in the Profile Management tab (Figure 28).

Figure 28 Mobile Adapter 2201 Client Manager - Profile Management tab



8 Once you have created the profile for the network that you are trying to join, your Mobile Adapter 2201 will associate with the proper access point. When you click on the Site Survey tab, the association icon will appear before the Network Name (SSID) that you selected (Figure 29).

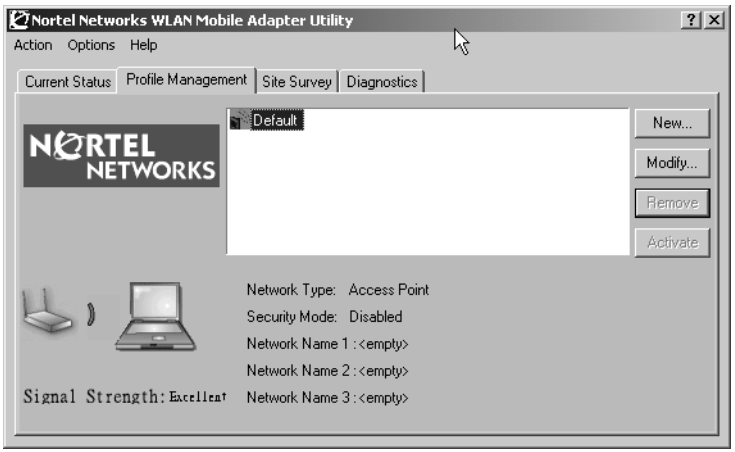
Figure 29 Mobile Adapter 2201 Client Manager - Site Survey tab


Nortel Networks WLAN Mobile Adapter Utility
Action Options Help
Current Status Profile Management Site Survey Diagnostics
NORTEL NETWORKS
Available Access Points and Ad Hoc Networks
Activate
Refresh & Roam
Network Name (SSID) Signal Strength Channel Wireless Mode Address (BSSID)
alphanet 26 dB 1 2.4 GHz 11 Mbps 00-20-D8-03-80-4C
alphanet 47 dB 6 2.4 GHz 11 Mbps 00-20-D8-03-80-6B
alphanet 20 dB 11 2.4 GHz 11 Mbps 00-20-D8-03-80-69
alphanet 28 dB 56 5 GHz 54 Mbps 00-20-D8-03-80-4C
alphanet 50 dB 60 5 GHz 54 Mbps 00-20-D8-03-80-6B
alphanet 31 dB 60 5 GHz 54 Mbps 00-20-D8-03-80-69
alphanet 6 dB 64 5 GHz 54 Mbps 00-20-D8-03-80-6C
alphanet 7 dB 36 5 GHz 54 Mbps 00-20-D8-03-82-79

Creating a New Network Profile

1 To create a new Network Configuration profile, click the Profile Management tab (Figure 30).

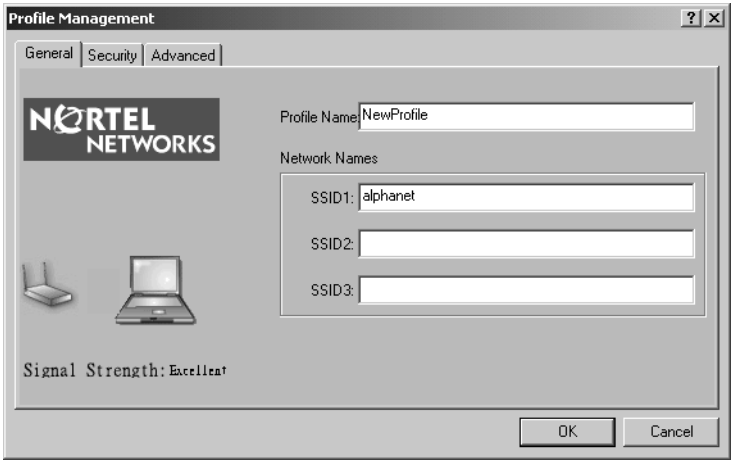
Figure 30 Mobile Adapter 2201 Utility - Profile Management tab



2 Click New. The Profile Management Settings dialog box will launch (Figure 31).

Enter the correct SSIDs for the network that you are going to join.

Figure 31 Profile Management Settings dialog box - General Tab



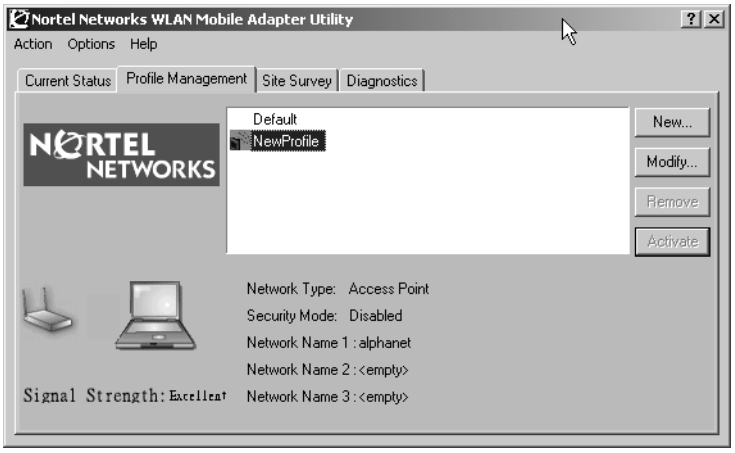
3 Click on the Security tab (Figure 32). The Security dialog box appears. Select the radio button that corresponds to the security method used on your network. (Default: None)

Figure 32 Profile Management Settings - Security Tab

Depending on the security method chosen, you may have to configure additional parameters. Table 3 on page 25 shows the required parameters and settings for each available security method.

4 Once all of the profile settings have been entered, click OK. The newly created profile will be displayed in the Station Configuration tab (Figure 33).

Figure 33 Mobile Adapter 2201 Utility - Profile Management tab



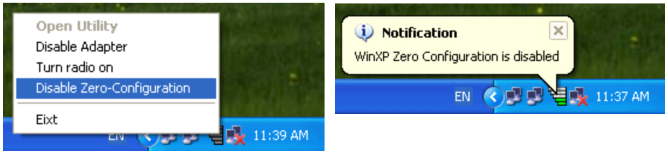
Configuring advanced settings for Windows XP

If using Windows XP, it is recommended that you use the Mobile Adapter 2201 Client Manager rather than the Windows XP Zero Configuration tool. Before using the Mobile Adapter 2201 Client Manager, please follow the steps below to disable the Windows XP Zero Configuration.

1 Click Start>Programs>Nortel Networks>WLAN - Mobile Adapter 2201 Utilities>Nortel Networks WLAN - Mobile Adapter 2201 Utilities to open the Utility.

2 From the Windows System Tray, you should see the signal icon. Right-click it and select “Disable Zero-Configuration” (Figure 34).

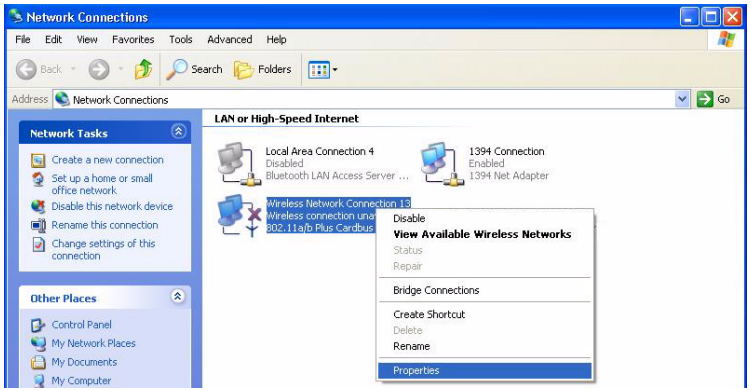
Figure 34 Windows system tray signal icon



Or

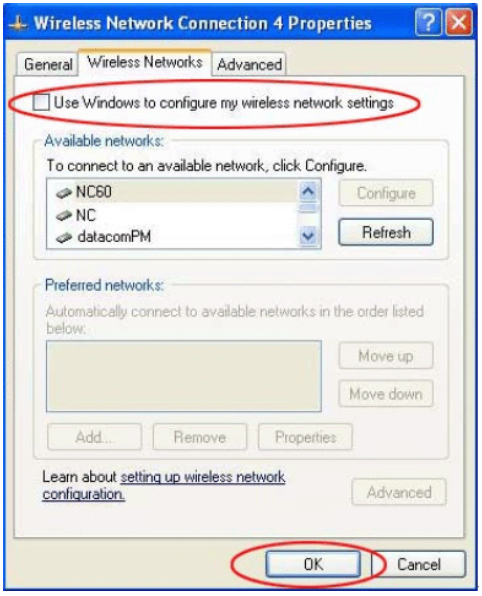
1. Go to “Control Panel” and double click “Network Connections.”
2. Right-click “Wireless Network Connection” of “Mobile Adapter 2201,” and select “Properties” (Figure 35).

Figure 35 Cardbus context menu



3. Select “Wireless Networks” tab, and uncheck the check box “Use Windows to configure my wireless network settings,” and then click “OK” (Figure 36).

Figure 36 Wireless networks tab



Chapter 3
Network Configuration

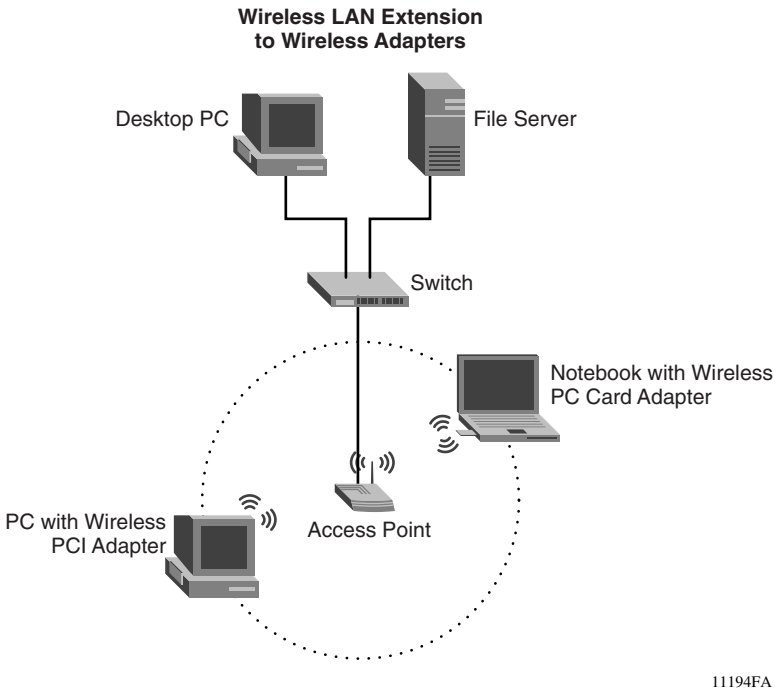
Device Configuration

You can set the Wireless Network Adapter to work in either “infrastructure” mode or “ad hoc” mode.

Infrastructure Mode

In infrastructure mode, devices communicate with each other by first going through an Access Point (AP). Wireless devices can communicate with each other or can communicate with a wired network (Figure 37). When one AP is connected to a wired network and a set of wireless stations, it is referred to as a BSS (Basic Service Set).

Figure 37 Infrastructure mode

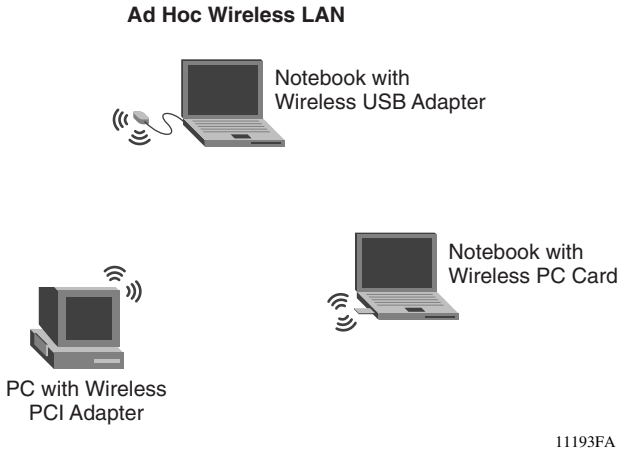


Ad Hoc Mode

Ad-hoc mode is also called “peer-to-peer mode” or “Independent Basic Service Set (IBSS).” In ad hoc mode (Figure 38), devices communicate directly with each other without using an Access Point (AP).

An ad hoc wireless LAN consists of a group of computers, each equipped with a wireless adapter, connected via radio signals as an independent wireless LAN. Computers in a specific ad hoc wireless LAN must therefore be configured to the same radio channel. An ad hoc wireless LAN can be used for a branch office operation.

Figure 38 Ad hoc mode



Chapter 4
Troubleshooting

Verifying the Driver

Windows 2000

1. Right-click “My Computer” icon on the desktop and choose “Properties.”
2. Select “Hardware” tab and click “Device Manager.” Open “Network adapters.” You should see your Mobile Adapter 2201 in the list. Right-click this Mobile Adapter 2201 and choose “Properties.”
3. From the “Device status”, you should see the line “This device is working properly.” If, instead, you see error messages displayed, please remove this Mobile Adapter 2201 (right-click this Mobile Adapter 2201 from the “Network adapters” list and choose “Uninstall”). Restart your PC and go through the installation process again.

Windows XP

1. Click Start>Control Panel> System.
2. Select “Hardware” tab and click “Device Manager.” Open “Network adapters.” You should see your Mobile Adapter 2201 in the list. Right-click this Adapter and choose “Properties.”
3. From the “Device status”, you should see the line “This device is working properly.” If, instead, you see error messages displayed, please remove this Mobile Adapter 2201 (right-click this Mobile Adapter 2201 from the “Network adapters” list and choose “Uninstall”). Restart your PC and go through the installation process again.

Check the following troubleshooting items before contacting Technical Support.

Table 5 Troubleshooting

Problems	Possible Solutions
My computer cannot find the Adapter	• Make sure the Adapter has no physical damage. • Make sure the Adapter is properly inserted in the Cardbus slot. • Try the Adapter in other Cardbus slots. • Try another Adapter in that particular Cardbus slot. • Check whether there are conflicts caused by other network cards in the computer. Remove all other cards then try this Adapter separately.
I cannot access any network resources from the computer.	• Make sure the correct software is installed. • Uninstall and reinstall the driver/utility (see Chapter 2 for the procedures). • Make sure all network devices are receiving power and working well. • Check whether the SSID is set properly. • Check with the network administrator to see whether the Access Point is configured properly to accept your signal. • If you have trouble accessing the Internet, make sure to check with the network administrator for further instructions.

Appendix A
Specifications

This appendix provides technical specifications for the Nortel Network Wireless LAN Mobile Adapter 2201.

Frequency Range

US/Canada: 2.412 - 2.484 GHz, 5.15 - 5.35 GHz, 5.725 - 5.825 GHz

Major European countries: 2.412 - 2.484 GHz, 5.15 - 5.35 GHz, 5.47 - 5.725 GHz

Japan: 2.412 - 2.497 GHz, 5.15 - 5.25 GHz

Frequency selection will vary according to current local regulations.

Modulation Technique

Direct Sequence Spread Spectrum (DSSS) (with CCK, BPSK, QPSK modulation) for 2.4 GHz

Orthogonal Frequency Division Multiplexing (OFDM) subcarrier
(with BPSK, QPSK, 16-QAM, 64-QAM modulation) for 5 GHz

Host Interface

Card Bus interface and form factor

Channels Supported

2.4 GHz (802.11b)	US/Canada: 11 (1 - 11 with 3 non-overlapping channels)
	Major European countries: 13 (1 - 13 with 3 non-overlapping)
	Japan: 14 (1 - 14)

5 GHz (802.11a)	US/Canada: 12 non-overlapping channels 5.15 - 5.35 GHz, 5.725 - 5.825 GHz Major European countries: 19 non-overlapping channel 5.15 - 5.35 GHz, 5.47 - 5.725 GHz Japan: 4 non-overlapping channels 5.15 - 5.25 GHz

Channel selection will vary according to current local regulations.

Operation Voltage

3.3V +/- 5%

Power Consumption

Transmission mode	1155 mW (estimated)
Receive mode	1221 mW (estimated)
Standby mode	297 mW (estimated)
Power saving mode	39.6 mW (estimated)

Output Power

Worldwide	2.4 GHz: 18 dBm (~65 mW) peak power
US	5 GHz **a.** 5.150 - 5.250: peak power to 50mW (17dBm) per FCC 15.407 specification (UNII band operation) **b.** 5.250 - 5.350:peak power to 250mW (24 dBm) per FCC 15.407 specification (UNII band operation) **c.** 5.470 - 5.725:not allowed **d.** 5.725 - 5.825:peak power to 1W (30 dBm) per FCC 15.407 specification (UNII band operation)
Europe	5 GHz **a.** 5.150 - 5.250 and 5.250-5.350: European regulations limit power; this limitation varies by current local regulations **b.** 5.470 -5.725: European regulations limit power; this limitation varies by current local regulations

Japan	5 GHz
	a. 5.150 ~ 5.250: Output power varies according to current local regulations
	b. 5.250 ~ 5.350: not allowed
	c. 5.470 ~ 5.725: not allowed
	d. 5.725 ~ 5.825: not allowed

Maximum power setting will vary according to current local regulations.

Operating System Support

Windows 2000 and Windows XP

Dimension

118mm (L) x 54mm (W) x 9.4mm (H)

Security

64-bit WEP, 128-bit WEP, 152-bit WEP Encryption

802.1x Authentication

WPA - TKIP

Operation Mode

Infrastructure & Ad-hoc mode

Transfer Data Rate

2.4 GHz	11, 5.5, 2, 1 Mbps, auto-fallback
5 GHz	54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto-fallback
	108, 96, 72, 48, 36, 24, 18, 12 Mbps by using turbo mode

Operating Temperature

0 - 55°C

Storage Temperature

-20 - 80 °C

Compliance Standards

Safety:

UL 60950

CAN/CSA-22.2 No. 60950

IEC 60950/EN60950, CB certificate and report with all national deviations

Radio Approvals:

FCC Part 15.247 (2.4 GHz)

FCC Part 15.401-15.407 (5 GHz)

RSS-139-1, RSS-210 (Canada)

EN 300.329 (Europe, 2.4 GHz)

EN 301.893 (Europe, 5 GHz)

EMI and Susceptibility (Class B):

FCC Part 15.107 and 15.109

ICES-003 (Canada)

EN 301.489-1 and -17 (Europe)

Other:

IEEE 802.11a and 802.11b

FCC Bulletin OET-65C (Human exposure to RF Fields)

RSS-102 (Canada)

Media Access Protocol

Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA) with positive ACK architecture